

COST ESTIMATING VALIDATION PROCESS “CEVP” RESULTS

BRIEFING PAPER

Prepared for the
MAY 2002 TRANSPORTATION COMMISSION MEETING

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PURPOSE:

This item is an update to the Commission on the status and results of the CEVP process.

ACTION/OUTCOME:

The Commission will not be required to take any action on the item presented this month.

BACKGROUND:

Cost Estimating for large projects has been problematic around the country. As costs increase citizens lose confidence in their governments ability to accurately forecast and then deliver these large projects on time and on budget. To help address these problems WSDOT Urban Corridors office has developed and is piloting an experimental new process that involves a national expert peer review and brings a statistical probability based approach to estimating.

DISCUSSION:

Since February, WSDOT has intensified efforts on cost estimation for the state's largest transportation improvement projects, or “mega projects,” included in the Referendum 51 project list. Some of these mega projects could be important parts of the Puget Sound area regional transportation package authorized under legislation passed last March.

This project cost information can be used as officials from King, Snohomish, and Pierce Counties develop 10-year financing and expenditure plans for a program to address some of the Puget Sound region's most significant transportation problems.

WSDOT and state and regional decision makers, are aware of public concern and skepticism about the costs of large public projects and how costs just seem to grow and grow. WSDOT wants the public and decision makers to have the best possible information about the likely cost ranges of major transportation projects. The word

“range” is important. We cannot wholly predict the future but we can, with this cost estimating tool, better forecast the range of costs and time a project will require. And then we can more realistically plan for the best – and also the worst – possibilities.

WSDOT has developed the Cost Estimate Validation Process (CEVP) based on the latest cost estimating experience around the country and elsewhere in the world.

CEVP is an intense workshop process, somewhat resembling value engineering. Each project is examined by a team of top engineers from private firms, public agencies from around the country, risk managers, and WSDOT engineers. Many of the participants have had extensive first-hand experience in large project programming and delivery.

CEVP recognizes that every project cost estimate will be a mix of the very likely, the probable and the maybe. Meeting the estimate of the number of yards and the cost of concrete to be poured for a roadway is pretty likely. It’s probable that if the project is built five years from now, inflation will add 20-25% to “today’s” project costs – but it would be a different ball game, and probably 15% higher cost, three years after that. And a big maybe – looking into the crystal ball – is whether contaminated soil would be encountered during construction requiring expensive clean-up costs.

The CEVP workshop uses systematic project review and risk assessment methods, including statistics and probability theory, to evaluate the quality of the information at hand and to identify and describe cost and schedule risks. Importantly, the process examines, from the very beginning, how risks can be lowered and cost vulnerabilities managed or reduced. In other words, a dividend of CEVP is to promote the activities that will improve end-of-project cost and schedule results.

CEVP will help communicate to the public the risks identified and their potential cost impacts – so that the public can understand the limits and assumptions of an estimate and better understand what people will actually see as the project proceeds.

We believe CEVP will improve everyone’s ability to work together on a regional proposal leading to reasonable expectations about what can be delivered from new taxes. It will also improve accountability for the public agencies delivering the projects.

➤ ***What a CEVP Summary Shows***

- **Project description and benefits.**
- **Schedule assumptions to adjust estimates to “mid-point of construction” dates for inflation.**
- **Project cost probability ranges at current state of design.**
- **Major risk factors and unknowns to which cost estimates are subject.**

Summaries have been provided for “full project implementation” and also for scenarios where parts of projects could be undertaken within an overall regional plan. These scenarios have been selected from many possibilities that decision makers could choose.

CEVP reports range from 30 to 90 pages in length and provide back-up detail for the conclusions stated in the summaries.

The CEVP Summaries

CEVP summaries for each mega-project were transmitted separately. Included are options for potential project phasing and staging.

Each project's CEVP summary reflects the unique features of a separate project. But all the summaries share the following points:

- **Project cost estimates are stated in dollar ranges, not as single numbers.** This reflects the limits of estimating precision at the planning stage when crucial decisions are yet to be made and the specific risks cannot be exactly costed.
- **Risk considerations specific to each project are identified and described** so that specific risk issues can be foreseen, discussed and evaluated by the public as the project moves ahead.
- **Likelihood of project construction schedules** have been taken into account and schedule-based adjustments made to the estimates to reflect the smaller purchasing power of dollars to be spent on construction several years in the future.

CEVP is still being developed. The CEVP summaries are not a warranty that the estimates are perfect, for it is true that you only know the final costs of a project when the project is finally completed. CEVP cannot change the fact that it is very early in the project development process for many of these major projects. There are still many unknowns. But risk areas that could drive up project costs can be communicated fairly to the public. In addition, the early identification of a risk areas creates management opportunities to minimize the potential of project costs associated with some of those risk areas.

RECOMMENDATION:

Not applicable.

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